

PATENT
8007-1091

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Shinji KOUSE et al.

Conf. 2839

Application No. 10/534,381

Group 1712

Filed May 9, 2005

Examiner A. Toscano

POLYESTER PLASTICIZER AND CHLORINE-CONTAINING
RESIN COMPOSITIONDECLARATION UNDER RULE 132

Commissioner for Patents
P.O. Box 1450.
Alexandria, VA 22313-1450
Sir:

I, Kiyotatsu Iwanami, hereby declare as follows:

I am the same Kiyotatsu Iwanami named as an inventor in the above-identified application and make this declaration in support of the present application, and to provide evidence in rebuttal to the contentions set forth in the Official Action mailed July 17, 2007. In particular, it is my understanding that the Examiner does not believe that the experimental results set forth in the specification and Declaration filed on June 21, 2007 are persuasive because the properties of a plasticizer comprising only 3-methyl-1,5-pentanediol are unknown.

I declare that the results set forth in the specification are sufficient to convey to one of ordinary skill in the art that the claimed invention exhibits unexpected results. Nevertheless, I have conducted an additional experiment that shows that when using

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only 3-methyl-1,5-pentanediol as a diol component, the polyester plasticizer obtained imparts to the polyvinyl chloride resin poor oil resistance. The results are as follows:

[Comparative Example 4]

In a reaction flask were put 2.9 molar parts of 3-methyl-1,5-pentanediol, 3.0 molar parts of adipic acid, 1.1 molar parts of 2-ethylhexanol, and 0.0005 molar parts of titanium tetraisopropoxide and allowed to react at 220°C in a nitrogen stream for 8 hours while removing produced water by evaporation and then under a pressure of 4000 Pa at 220°C for 1 hour to give polyester plasticizer No. 7 having an average molecular weight of 1800 and a viscosity of 3000 mPa·s.

A sheet was prepared in the same manner as in Example 1 described in the present specification, except for using the polyester plasticizer No. 7 as a polyester plasticizer. The sheet was evaluated by a tensile test and an oil resistance test in the same manner as in Example 1 described in the specification. The test results obtained are shown below.

(a) Tensile test

100% Modulus: 11.1 MPa

Elongation: 378%

Tensile Strength: 22.4 MPa

(b) Oil Resistance Test

Elongation Retention: 84%

Tensile Strength Retention: 91%

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Thus, in Comparative Example 4, 3-methyl-1,5-pentanediol is used as the diol component. It is clear from Comparative Example 4 that when using only 3-methyl-1,5-pentanediol as the diol component, the obtained polyester plasticizer No. 7 imparts to a polyvinyl chloride resin poor oil resistance. Accordingly, it is clear from Example 1, Comparative Example 1 (see specification) and Comparative Example 4 that the plasticizer of the present invention comprising 3-methyl-1,5-pentanediol and 2-methyl-1,3-propanediol exhibits unexpected results.

Thus, in view of the examples set forth in the specification, the Declaration filed on June 21, 2007 and Comparative Example 4 as shown above, applicants believe that the claimed invention exhibits unexpected results that provides even further evidence that the claimed invention would not have been obvious in view of the BIESIADA and HAYASHI publications.

The undersigned declare further that all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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K. Brown

28 Sep, 2007
Date